



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/506,880	12/08/2004	Joachim Kiefer	3799.1000-000	6749
21005 7590 02/14/2008 HAMILTON, BROOK, SMITH & REYNOLDS, P.C. 530 VIRGINIA ROAD P.O. BOX 9133 CONCORD, MA 01742-9133				
EXAMINER				
PEZZUTO, HELEN LEE				
ART UNIT		PAPER NUMBER		
1796				
MAIL DATE		DELIVERY MODE		
02/14/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/506,880

**Applicant(s)**

KIEFER ET AL.

**Examiner**

Helen L. Pezzuto

**Art Unit**

1796

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 13-16 and 18-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13-16 and 18-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/S508)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Response to Amendment***

Applicant's amendment to claim 13, and the cancellation of claims 23-32 filed in the response on 12/3/07 is acknowledged. Currently, claims 13-16, and 18-22 are pending in this application.

Upon further consideration, Suzuki et al. (US-856) is hereby withdrawn as an applied reference.

***Claim Rejections - 35 USC § 102/103***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do

not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 13-16, and 18-22 are rejected under 35 U.S.C. 102(b), 102(e), 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Andreola et al. (US-968) or Formato et al. (US-469) or Zouahri et al. (European Polymer Journal, 38 (2002), 2247-2254) for the reasons of record.

US 5,643,968 disclose ion exchange membranes comprising graft copolymer having a backbone of a first polymer and a polymerizable vinyl monomer containing ion exchange functional groups. Suitable backbone polymer polymers include any polymer containing aromatic rings

Art Unit: 1796

(col. 3, lines 24-35), and suitable functional vinyl monomer include amides and esters of vinyl phosphonic acids, which may be subsequently hydrolyzed by either acid or base if desired (col. 3, lines 58-65; col. 6, lines 25-65; col. 16, claim 3). Thus, forming the instant membrane product.

US 6,248,469 to Formato et al. discloses a solid polymer electrolyte membrane having a porous polymer substrate interpenetrated with an ion-conducting material. Suitable polymer substrates include those containing at least one nitrogen, oxygen or sulfur atom in the recurring units as expressed in the present claims (col. 6, lines 22-50; col. 7, lines 1-29; col. 10, lines 9-18). The preferred ion-conducting material includes the instant polyvinylphosphonic acid (col. 14, lines 31-41). The resultant membrane has ion-conductivity of greater than 0.1 S/cm (col. 12, lines 58-64). One of the method embodiments in producing the membrane comprises the step of preparing the substrate polymer and subsequently impregnating the substrate with the chosen monomers, which are then polymerized in situ to form the composite membrane (col. 8, lines 30-34; col. 17, lines 22-27). Thus, producing the instant membrane product.

The article to Zouahri et al is related to the synthesis of ion exchange membrane by graft polymerization of monomers such as vinyl phosphonic acid onto ozonized polyethylene. The resultant membrane has an electrical resistance of  $7.00 \Omega\text{cm}^2$ . Thus, forming the instant membrane product.

The present claims are presented in a product-by-process format. Thus, the patentability of the claimed invention is determined based on the product itself, not the method of making it. It is well settled that if the product in a product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior art product was made by a different process. Accordingly, when applicant's product and that of the prior art appear to be identical or substantially identical, the burden shifts to applicant to provide evidence that the respective products do in fact differ, and that prior art product does not necessarily or inherently possess the relied upon characteristics of applicant's claimed product.

#### ***Response to Arguments***

Applicant's amendment and remarks filed on 12/3/07 have been fully considered but are not found to be persuasive.

Firstly, applicant urges that the date of acceptance of publication ( i.e. March 20, 2002) of the journal article by Zouahri et al. is after the earliest priority date of the instant application (i.e. March 5, 2002). Hence, Zouahri et al. is unavailable as a prior art reference. The examiner disagrees as a claim to priority under 35 U.S.C. 119(a)-(d) must be perfected by filing a certified copy of the priority document and an English translation according to 37 CFR 1.55(a), in order to antedate a reference. As of today, the office has not received a certified copy of an English translation of the foreign priority document. Secondly, applicant urges that Andreola et al. (US-968) describes a graft copolymer which differs from applicant's inter-penetrating network of polyvinylphosphonic acid and the polymer of step (a). This is not compelling as the alleged feature of interpenetrating network of two alleged separated polymers, upon which applicant relies is not recited in the rejected claims. Although claims are interpreted in light of the specification, limitations from the specification are not read into the claims. Thirdly, with respect to the Formato reference (US-469), applicant urges that the substrate polymer of prior art is different from the polymer of step (a) of applicant's, and hence the composite membranes of Formato is different as well. Applicant further argues that the

Art Unit: 1796

claimed membrane is not taught to contain voids or microspores as compared to prior art membrane. The examiner respectfully disagrees. The recited polymer in step (a) and the membrane as claimed do not distinguish over prior art's because the present claims do not specifically preclude the presence of voids or micropores. Furthermore, prior art specifically teaches the formation of interpenetrating network membrane via in-situ polymerization of monomers in the presence of substrate polymers (col. 17, lines 22-44). Finally, the issue of the resulting products made by a different process is not relevant to the claimed product which appears to be identical or substantially identical to prior art product, even if prior art product was made by a different process. The patentability of the claimed invention is determined based on the product itself, not the process of making it. Accordingly, the examiner's position is maintained.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action



is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Helen L. Pezzuto whose telephone number is (571) 272-1108. The examiner can normally be reached on 8 AM to 4 PM, Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Helen L. Pezzuto/

Primary Examiner, Art Unit 1796